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AD HOC OPEN-ENDED INTER-SESSIONAL WORKING GROUP ON ARTICLE 8(j) AND RELATED PROVISIONS OF THE CONVENTION ON BIOLOGICAL DIVERSITY

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Item 5 of the provisional agenda*

THE REVISED PHASE ONE, AND PHASE TWO OF THE COMPOSITE REPORT ON THE STATUS AND TRENDS REGARDING THE KNOWLEDGE, INNOVATIONS AND PRACTICES OF INDIGENOUS AND LOCAL COMMUNITIES RELEVANT TO THE CONSERVATION AND SUSTAINABLE USE OF BIOLOGICAL DIVERSITY

Executive summary and recommendations

Note by the Executive Secretary

I. INTRODUCTION

1. In paragraph 8 of decision VI/10, the Conference of the Parties adopted the outline of the composite report on the status and trends regarding the knowledge, innovations, practices of indigenous and local communities embodying traditional lifestyles relevant to the conservation and sustainable use of biological diversity.
2. Pursuant to paragraph 9 of the same decision, the Conference of the Parties requested the Executive Secretary to undertake the first phase of the composite report, based upon elements 1 and 2 in the outline, and to submit the first phase report to the third meeting of the Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(j) and Related Provisions, which was held in Montreal from 8 to 12 December 2003.
3. The composite report consisted of a global (composite) report (UNEP/CBD/WG8J/3/INF/1), which is based on regional reports that are also available as information documents (UNEP/CBD/WG8J/3/INF/3-10), all of which were made available at the third meeting of the Working Group.
4. At its seventh meeting, in decision VII/16 E, the Conference of the Parties requested the Executive Secretary to continue work on phase one of the composite report in order to produce a revised version of it. In particular, the Conference of Parties in decision VII/16 E, paragraph 4 (b) (i), requested an assessment of the advantages and limitations of registers as a measure to protect traditional knowledge and in paragraph 4 (c) requested the preparation of a regional report focussing on the Arctic region.

* UNEP/CBD/WG8J/4/1.

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These elements are the focus of the revised phase one of the composite report (contained in documents UNEP/CBD/WG8J/4/INF/9 and UNEP/CBD/WG8J/4/INF/3 respectively) and the executive summary for phase one contained in annex I to this document.

5. Also, the Conference of the Parties requested, through the national focal points, in consultation with and after approval of indigenous and local communities and in consultation with and with input from Parties, Governments, relevant organizations, indigenous and local communities and all relevant stakeholders as appropriate, to immediately start work on a second phase of the composite report, laying emphasis on sections 4 and 5 of the outline of the composite report, foreseeing respectively the identification of national processes that may threaten the maintenance, preservation and application of traditional knowledge, innovations and practices and the identification of processes at the local community level that may threaten the maintenance, preservation and application of traditional knowledge, innovations and practices.

6. As part of the plan for the preparation of the report, the Conference of the Parties decided that an executive summary and recommendations should be prepared in a format suitable for presentation to the Ad Hoc Working Group on Article 8(j) and Related Provisions. This present note responds to that request. Annex II below provides an executive summary of phase two of the composite report, which focuses on the identification of national processes that may threaten the maintenance, preservation and application of traditional knowledge and the identification of processes at the local community level that may threaten the maintenance, preservation and application of traditional knowledge. To complement the executive summary, the appendix to annex II provides an overview, in the form of a matrix, of the national and local processes and obstacles identified in the regional reports, for easy reference.

II. SUGGESTED RECOMMENDATIONS

7. The Ad Hoc Working Group on Article 8(j) and Related Provisions may wish to recommend that the Conference of the Parties at its eighth meeting:

(a) *Takes note with appreciation* of the information prepared for the fourth meeting of the Ad Hoc Open-ended Inter-sessional Working Group on Article 8(j) and Related Provisions and in particular, the completion of phase one of the composite report, which includes the report on traditional-knowledge registers and the regional Arctic report;

(b) *Also notes with appreciation* the progress in the work of phase two of the composite report;

(c) *Recommends* to Governments, that registers developed at local and national levels with the full and effective participation and the prior informed consent of indigenous communities may be useful measures to protect traditional knowledge;

(d) *Requests* the Executive Secretary, in consultation with Governments, international organizations, indigenous and local communities and all interested stakeholders, to consider the feasibility of establishing an international register for traditional knowledge and report on the outcome of discussions at the fifth meeting of the Working Group.

(e) *Notes with concern* the specific vulnerabilities of indigenous and local communities of the Arctic, small island states and high altitudes, concerning climate change and accelerated threats to traditional knowledge and requests further research be conducted into highly vulnerable indigenous and local communities, traditional knowledge and climate change and the outcomes of the research to be made available to the Working Group at its fifth meeting for urgent attention;

(f) *Recalling* element 19 in the annex to decision VII/16 E (“Parties should establish measures to ensure respect for the rights of unprotected or voluntarily isolated communities”), *requests* the Executive Secretary in consultation with governments, international organizations, indigenous and local communities and all interested stakeholders, to research and prepare a report on possible measures to ensure respect for the rights of unprotected and voluntarily isolated communities taking into account their traditional knowledge and the development of access and benefit-sharing regimes;

(g) *Decides* to extend the mandate of the advisory group established by decisions VI/10, annex I, paragraph 28 (b), and VII/16 E, paragraph 4 (d), to continue to provide advice as required to the programme of work of Article 8(j) and related provisions, including the further development of phase two of the composite report and, in particular, element D, subject to the availability of resources.

*Annex I***EXECUTIVE SUMMARY OF THE REVISED PHASE ONE OF THE COMPOSITE REPORT****A. *Assessment of the advantages and limitations of registers as a measure to protect traditional knowledge***

1. Decision VI/10, annex I, regarding the development of the composite report, calls for the “identification and assessment of measures and initiatives to protect, promote and facilitate the use of traditional knowledge”, and noted that “a mix of appropriate initiatives is emerging that can facilitate the revival and maintenance of traditional knowledge and cultural practices relevant to the conservation and sustainable use of biological diversity”, including the “establishment of traditional-knowledge registers”.

2. The report on registers examines the terminology surrounding the creation of traditional knowledge databases and the identification of traditional-knowledge registers as one of several kinds of traditional knowledge data-bases; general benefits and harms that arise from their creation; a functional classification for traditional knowledge databases; issues raised by representatives of indigenous and local communities; examples from national experiences and indigenous and local communities for compiling data-bases and principles drawn from these.

3. The report notes that traditional knowledge registries or databases have been developed by various communities around the world and that they are generally compiled by communities or community groups for their own benefit. They have been found useful for organizing knowledge to enable better protection and improved management of the community resources. Existing databases and registries vary greatly in what they seek to protect, and how they operate: whether their main aim is to conserve and disseminate such material for wider public access, or whether they seek to protect and restrict access to it. Some of the purposes of existing databases/registers are:

(a) Maintenance and preservation of traditional knowledge by virtue of recording and documenting it;

(b) Protection against the inappropriate granting of intellectual property rights by providing evidence of prior art;

(c) Raise awareness of communities with respect to the values of traditional knowledge;

(d) Encourage long-term conservation and promotion of natural resources and their related traditional knowledge;

(e) Provide information to interested parties who may be interested in obtaining information available in the registry, in exchange for a fee;

(f) To be used as part of a legislative system for the assertion of intellectual property rights over traditional knowledge (e.g. a national *sui generis* system to protect indigenous and local knowledge).

4. The report also provides a detailed examination of the usefulness of registers and provides solid conclusions and considerations.

5. Some considerations that may be drawn regarding the use of traditional knowledge databases and registers are:

(a) Ensure that all measures are derived with full and effective participation of indigenous and local communities, with their free prior informed consent, and based on mutually agreeable terms;

(b) The rights of indigenous and local communities to their traditional knowledge and the rights to share fully in the benefits from the use of that knowledge should be recognized. National and international law and policy should recognize, to the extent practicable, customary law related to the conservation and sustainable use of biodiversity;

(c) Implement traditional knowledge database approaches through a fully participatory approach that allows indigenous and local communities to define their goals for the protection of their

knowledge, their recommendations for mechanisms for this protection that may include, *inter alia*, the use of traditional-knowledge databases or registers;

(d) Perform assessments of the conflicts between the common principles in customary laws of indigenous and local communities and national and international norms, policies, laws and legislation to design a mixture of measures to address these conflicts. Alleviating the conflicts can determine the extent to which traditional knowledge databases and registers are used and their scope;

(e) The use of formal traditional-knowledge registers should be implemented as part of an integrated strategy and not as an end in itself. Registers should be implemented conjointly with multiple policy and legislative measures that will allow indigenous and local communities to protect and control the information deposited in them.

(f) Where knowledge is shared or made public, this should be achieved with the prior informed consent of indigenous and local communities and on mutually agreeable terms. Where the public domain and public disclosure laws conflict with customary law or the expressed interests of indigenous and local communities, Parties should give full consideration to customary law. Responses include, *inter alia*, the use of non-register approaches to protection of traditional knowledge such as the adoption of user measures and disclosure of origin, to the development of *sui generis* measures that modify disclosure requirements under patent law or national administrative law;

(g) The development of traditional-knowledge registers should be guided by principles of equity, proportionality and subsidiarity. Indigenous and local communities should not be required to assume a documentation burden that is not required for other forms of knowledge, and any documentation requirements should be voluntary and sensitive to customary law. The use of registers should be proportional to the problems that the registers are expected to resolve. An example is when massive documentation and defensive disclosure is proposed to solve an unauthorized bioprospecting problem limited to a small number of plants. Subsidiarity is the hierarchy of principles and decision-making that ranks higher ends above utilitarian means and places decision-making at the lowest appropriate level;

(h) The use of open access registers should be avoided, except with the prior informed consent of indigenous and local communities, and measures should be adopted that limit and record the use of traditional-knowledge databases and registers that protect both the knowledge holders and the users on mutually agreeable terms;

(i) National Governments and international bodies should consider *sui generis* measures within intellectual property systems to protect the knowledge of indigenous and local communities. These measures include, *inter alia*, the adoption of disclosure of origin or other measures that can reduce the burden on indigenous and local communities to document their knowledge; changes in evidentiary requirements to include oral and visual materials, and the use of confidential and unpublished materials, as evidence of prior art;

(j) Distinguish different kinds of knowledge held by indigenous and local communities, and develop measures appropriate to each. Secret and sacred knowledge should be highly defended forms of traditional knowledge and they should not be included in registers without the prior informed consent of indigenous and local communities;

(k) Non-legal and non-intellectual property measures should be integrated into a comprehensive traditional-knowledge protection strategy. National governments can use executive orders, policy statements, agency guidelines and similar measures to education decision makers, businesses and the public about the obligation to respect the rights of traditional-knowledge holders and respect for using this knowledge even when it considered part of the public domain. National Governments and international bodies can adopt fiscal policies that require obtaining prior information consent for scientific research or development projects requirements before using, publishing or compiling traditional knowledge;

(l) The use of traditional-knowledge registers for defensive disclosure against patents should not be used without the prior informed consent of indigenous and local communities. Disclosure can

violate customary law and put benefit sharing at risk. Disclosure may be acceptable to indigenous and local communities in some cases, particularly if alternative benefit sharing arrangements exist, such as the collection of funds into trusts through the use of bioprospecting fees, commodity taxes, development deposits, and the *domaine publique payant*. The use of traditional knowledge trusts or biocultural heritage trusts should be explored, and the use of registers as part of a trust approach should also be explored, with the participation of indigenous and local communities. Use of public domain approaches should not be initiated without the free prior informed consent of indigenous and local communities;

(m) Support should be made and expanded for the development of traditional-knowledge databases by indigenous and local communities for their internal capacity-building;

(n) The clearing-house mechanism, in its role as a an indigenous and local community focal point, and with the participation of representatives of indigenous and local communities, should review its operations and the operation of collaborating networks to ensure that knowledge made available through any databases conform to Article 8(j) and the decisions of the Conference of the Parties. The clearing-house mechanism should further be invited to develop with the participation of representatives of indigenous and local communities guidelines and protocols for the use of traditional knowledge in biodiversity information networks, and this should be reflected in the strategic plan of the clearing-house mechanism;

(o) Legal measures should focus on the protection of traditional knowledge rather than the protection of register technologies. Database protection approaches, for example, do not necessarily protect the items of knowledge themselves, and rapid advances in digital technology make such protection vulnerable;

(p) National Governments should work to develop comity and cross-jurisdictional recognition of national measures that recognize rights to traditional knowledge, the legitimacy of customary law, and limitations for the use and transmission of traditional knowledge;

(q) National Governments should repatriate the traditional knowledge of indigenous and local communities stored in national databases, and encourage the repatriation of traditional knowledge stored in private and corporate databases;

(r) The Parties should note the useful work performed by the World Intellectual Property Organization (WIPO) on the roles of disclosure of origin, defensive registers, positive protection, customary law, the public domain, and *sui generis* legal regimes in the implementation of traditional-knowledge registers, and encourage the Intergovernmental Committee on Genetic Resources, Traditional Knowledge and Folklore to make further and more detailed analysis. The World Trade Organization (WTO) should look at the same issues in relation to Article 27 (b) of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) on patentability or non-patentability of plant and animal inventions, and the protection of plant varieties, and Article 39 on the protection of trade secrets. WTO should also fully examine the relation of registers in the implementation of the Doha Ministerial Declaration that linked these issues to the development agenda. Further work should also be undertaken by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Conference on Trade and Development (UNCTAD) and the Food and Agriculture Organization of the United Nations (FAO) should also be encouraged to undertake similar work to develop more unified measures for the implementation of traditional-knowledge registers.

6. Leading conclusions are:

(a) Traditional-knowledge databases relevant to the conservation and sustainable use of biological diversity have diverse functions;

(b) The creation of traditional-knowledge databases present positive and negative incentives to indigenous and local communities that have demonstrated ambivalence to their creation and maintenance;

(c) The creation of traditional-knowledge registers for the purposes of defensive publication of traditional knowledge as prior art for the pre-emption or invalidation of patents or the positive registration of traditional knowledge rights have provided both some promising and some troubling experiences for indigenous and local communities;

(d) Traditional-knowledge databases, non-IPR-related traditional-knowledge registers and other traditional-knowledge databases are numerous and also present conflicting incentives to and impacts on indigenous and local communities;

(e) The design and implementation of traditional-knowledge databases reflect numerous legal and policy issues that should be addressed as part of integrated measures for the development and promotion of traditional knowledge databases relevant to the goals of the Convention on Biological Diversity; and

(f) The development of policy and law related to traditional-knowledge databases should be flexible, adaptable to the particular circumstances of different indigenous and local communities, based on a fundamental respect for the customary laws and cultural integrity of indigenous and local communities, and be based on the principle of free, prior informed consent (FPIC).

B. Regional report focusing on the Arctic region

7. At its seven meeting, in decision VII/16 E, paragraph 4 (c), the Conference of the Parties requested the preparation of a regional report focussing on the Arctic region. The Arctic regional report is a primary focus (together with the report of registers) of the revised phase one of the composite report and the executive summary for phase one contained herein.

8. The Arctic areas are diverse in relation to each other with differences and variations regarding people, their cultures, societies, and lands. There are variations in climate phenomena, landscapes, flora and fauna. Many threats and challenges exist in these regions. Obviously, there are also many opportunities and programs leading to beneficial development. The indigenous peoples of the Arctic share many similarities. They are indigenous to their lands and have been subjected to overall colonial activities by the surrounding States, and national and multinational companies. The indigenous peoples have knowledge that is now regarded as useful regarding the management of lands, waters, and natural resources of this planet. Their traditional knowledge is now receiving attention from scientists, politicians, and administrators of sustainability and biodiversity.

9. The indigenous peoples of the Arctic region are dependent on their traditional environmental knowledge to properly manage the resource base of their regions. Their cultural-spiritual set of values is an intrinsic part of their knowledge and guides them in their day-to-day activities and usage of nature. indigenous lands constitute an ecological-spiritual context of indigenous knowledge regarding the biodiversity of these areas. The loss of indigenous lands and practices means a loss of biodiversity knowledge.

10. Article 8(j) of the Convention on Biological Diversity is oftentimes constrained to deal with a limited set of issues, which seem to be easy to administrate and implement. However, according to the findings of this report, there is a need to analyse Article 8(j) in a broader way and take into account other sections of the Convention on Biological Diversity as well. There is also a need to go through the other international conventions and documents (for instance, Agenda 21, ILO No. 169) as well as the national legislation and regulations that have to do with indigenous people and that affect their lives. National capacity for implementation activities must be promoted. National authorities need to include different stakeholder interests in their policymaking processes.

11. Parties have to restructure their land rights policies. In many cases, indigenous societies and groups do not have sufficient national legislative support and or any degree of self-governance that is needed for maintenance of their biodiversity-related practices and knowledge for successful implementation of Article 8(j). Furthermore, the options to participate in the decision-making processes at the national, regional, and local levels are in many cases weak or non-existent. Full participation and

responsibility in the decision-making process regarding the management of resources must be promoted. Self-determination of indigenous peoples is a key issue.

12. Article 8(j) and traditional knowledge are cross-cutting issues that are related to many sectors of society including politics, research, administrative measures, economy, legislation, education, and information. Economic arrangements should be developed to enable indigenous participation in the decision-making processes that affect their lives. Stating that indigenous people are welcome to participate without providing funding is not adequate since most indigenous communities' lack the financial means to fund their own participation. This results in the inability of indigenous communities being able to promote the use, and implementation of Article 8(j)-related traditional knowledge. These economic mechanisms must also enable indigenous peoples to develop their own sources of revenue ensuring their communities can become more self-sufficient. A financial programme needs to be established to cover the national costs emerging from implementation of Article 8(j).

13. A challenge to take into consideration is that the biodiversity infrastructure (legislative measures, monitoring programmes, financial support systems, capacity-building plans or other suitable indicators) required for the assessment of biodiversity and knowledge, as it is related to indigenous communities, is in many countries poorly developed or implemented. The different sectors of modern society, at all hierarchical levels, need guidelines for the implementation of Article 8(j). In addition, the knowledge and information-sharing regarding biodiversity is scattered and therefore difficult to access. Researchers, policymakers and others should identify the key issues regarding biodiversity and climate change factors and bring them into public awareness to be shared and debated. Public awareness may lead to more environment-friendly attitudes and life-styles that promote the protection and promotion of biological diversity.

14. In some indigenous communities, the local indigenous governments or power-holders do not see any value in maintaining or passing on traditional knowledge. This creates a difficult situation for the holders of traditional knowledge and for those who want to maintain and develop traditional knowledge base. The indigenous youth and other members of local communities may show little interest in the traditional life-style, values and knowledge. When exposed to traditions the young people become aware of the importance of traditional ecological knowledge and related practices. Educational activities and information sharing must be strengthened to address these problems. Capacity-building measures have to be taken. The indigenous institutions, research organizations, political structures, and communities need support to conduct their own activities in relation to Article 8(j). It is important to have an approach that reaffirms and supports local knowledge, strengths, and values, when possible and appropriate, instead of using outside expertise.

15. Local indigenous societies, including their individual members, need support for their overall viability and well-being to become a reality. The sustainability of these communities can only be achieved if they have the ability to fully interact and relate to the environment, ensuring that its biodiversity and health is maintained.

16. Equality and equity of men and women is of relevance to the achievement of sustainability and to the pursuit of biological diversity measures. Empowerment of women is crucial as they sustain community life and its knowledge base. Environmental pollution affects women and children they bear and women oftentimes react to negative local changes by changing their place of living. In a possible scenario, the women of the Arctic are left outside the planning, decision-making, and implementation of Article 8(j). It is relevant to identify the gender issues and promote appropriate action in relation to the women's values, knowledge, and practices. Article 8(j) especially concerns future generations. Parents and Elders may aid local communities and schools to foster biodiversity-related education.

17. One of the big challenges regarding traditional knowledge is its commercial value indigenous knowledge is sold or misappropriated, and only a small part of the income from the knowledge and practices come back to the source communities. In addition, the trading can cause internal division within the indigenous communities. In many cases, States allow international companies and state agencies to appropriate indigenous knowledge and property. The States develop laws and standards for assets that

they do not own or have previously used. Regarding agreements on access to genetic resources and benefit-sharing (ABS), indigenous groups feel that before they can negotiate access and benefit-sharing in respect of these resources and their traditional knowledge there first must be in place mechanisms and policies that will protect their traditional knowledge. In some cases, there is lack of trust in Governments and scientists, which may have an impact on the willingness to negotiate. It is also imperative that there is a discussion regarding cultural and intellectual property rights surrounding the mechanisms of protection and the right to dispose natural resources including intellectual property. Many States and authorities regard cultural items and knowledge as property owned by state, society at large, etc. A special national law may protect indigenous property. There is a need to address the issue of benefit-sharing from the use of traditional knowledge as defined in Article 8(j).

18. Researchers and scientists have to evaluate their research activities, values, concepts, and theories regarding how they conduct their research in indigenous communities, or how the research can impact these communities. Researchers are now being encouraged or required to provide information back to the communities that they can use for their own purposes. Participatory research activities are preferred and valued. There is a need to further develop guidelines regarding traditional knowledge research, education and political-administrative-legal implementation processes. The overall documentation of traditional knowledge concerning species, ecosystems, indigenous management activities, and other factors relating to the Article 8(j) is urgently needed. Research needs to identify knowledge gaps and bring into light its products by participating in public policy discussions.

19. Documentation is not enough to maintain the traditional knowledge that benefits biodiversity and the sustainability of the Arctic. One needs to support local subsistence activities and look for economic alternatives at the local levels. Most biodiversity-related knowledge of indigenous peoples is related to and sustained by everyday practices and these need to be maintained and encouraged.

20. Climate change issues need to be addressed because many indigenous cultures are already now at risk of extinction. It is important to cooperate internationally because many problems facing the Arctic areas originate from the countries in the south. Climate change accelerates the movement of pollution and contamination to the Arctic regions. International and local observations of climate change, species, and ecosystems are of importance and have to be supported. The traditional knowledge of indigenous peoples can assist in the observations of climate change. States should also take all necessary measures to reduce pollution, resource depletion, military activities, and prevent negative climate change impacts from negatively affecting indigenous communities in the Arctic.

21. This report has found that there is a broad range of activities and initiatives that are currently happening across the Arctic countries that are facilitating the promotion, practices, and preservation of traditional knowledge. These activities are meeting with various levels of success, but the one clear thing is that there is a desire to protect traditional knowledge for future generations. Unfortunately, this will be not enough since this report has also found that there are many threats to the maintenance, preservation, and application of traditional knowledge across the Arctic regions, and these ongoing threats have to be addressed, otherwise the decline of traditional knowledge and biodiversity will continue unabated.

22. The goal and commitment of the Parties to the Convention on Biological Diversity is to reduce biodiversity loss by 2010. There are several levels or hierarchies of implementation: international/global, national and regional/local. In summary, the recommendations are given below:

(a) *International and global:*

- (i) Other applicable sections of the Convention on Biological Diversity need to be analysed and addressed in a broader way;
- (ii) Other international conventions and agreements have to be analyzed and addressed in relation to implementation of Convention on Biological Diversity to see what gaps and overlaps exist to minimize future problems;

- (iii) Cooperate internationally to monitor and address climate change, contamination, and pollution, which is an international problem. Appropriate measures have to be taken to prevent damage to indigenous societies;
 - (iv) International research programs need to communicate and address issues surround traditional knowledge and biodiversity;
 - (v) Increased communication and collaboration between institutions and organizations that are addressing the issues of indigenous knowledge and biodiversity in the Arctic, and to make efficient use of resources, identify critical issues facing the Arctic, and to examine where there are gaps and overlaps in organizational activities;
- (b) *National:*
- (i) The Parties to the Convention on Biological Diversity need to revise their policies and legislation that affect indigenous peoples and ensure there is secure funding to implement legislation regarding biodiversity and traditional knowledge;
 - (ii) Indigenous self-determination should be recognized, national legislative support provided, and land and resource rights need to be addressed and solved;
 - (iii) Information regarding biodiversity needs to be delivered to different stakeholders, and the public. Capacity-building processes need to be strengthened nationally at all levels. Empowerment and education of indigenous peoples should be promoted;
 - (iv) Indigenous participation in planning and decision-making processes should become fully participatory;
 - (v) Research is needed to document traditional knowledge of indigenous peoples and to incorporate this knowledge in various research activities and action programmes concerning sustainability, management, biodiversity and climate change;
- (c) *Regional and local:*
- (i) Local indigenous subsistence and management activities need support from the government, local communities, and all stakeholders to ensure that people's knowledge is used and respected in the protection of their environment;
 - (ii) Local alternative economies, such as tourism, should be developed in a responsible manner to meet the modern challenges local people face. In this context, different capacity-building measures and educational programs are needed in order to learn to respond to changes;
 - (iii) Use and build upon the existing local resources and capacity available rather than developing new initiatives and promptly implement projects that address local community needs;
 - (iv) Promote education initiatives such as biodiversity, and cross cultural education in the local communities, schools, colleges, and universities;
 - (v) Ensure that indigenous peoples receive proper compensation from the benefits connected to the extraction of natural resources in their areas;
 - (vi) Stakeholders and policy developers need to extend their lines of communication and discuss the relevant issues that communities are facing, and engage the general public. Incentives for commitment and involvement in the protection of biodiversity need to be developed;
 - (vii) Researchers need to follow guidelines regarding the collection and use of traditional knowledge and provide useful and applicable information back to the communities;

- (viii) Develop processes to ensure proper respect for all people, to bridge the gap between youth and Elders, and to disseminate the combined knowledge, experiences, perspectives, and spirituality into the communities.

Annex II

**EXECUTIVE SUMMARY OF PHASE TWO OF THE COMPOSITE REPORT –
IDENTIFICATION OF NATIONAL PROCESSES THAT MAY THREATEN THE
MAINTENANCE, PRESERVATION AND APPLICATION OF TRADITIONAL KNOWLEDGE,
INNOVATIONS AND PRACTICES AND THE IDENTIFICATION OF PROCESSES AT THE
LOCAL LEVEL THAT MAY THREATEN THE MAINTENANCE, PRESERVATION AND
APPLICATION OF TRADITIONAL KNOWLEDGE, INNOVATIONS AND PRACTICES**

Introduction

1. Phase two of the composite report aims to provide a compilation of the threats to the practice and transmission of traditional knowledge throughout the African, the Arctic, Asian/Australian, Latin American, Central American and Caribbean, Pacific and North American regions. As a global compilation, the report seeks to provide information on the broader trends of processes threatening the retention and use of traditional knowledge at various levels, including local, national and international. This ‘trends’ approach has been taken due to the manifest complexity of both the threats to traditional knowledge and the global nature of the report and the diverse regions involved.
2. Both sets of indirect and direct threats are taken into account in order to build a comprehensive picture so as to develop mechanisms and measures to address the underlying causes of decline of traditional knowledge, innovations and practices.
3. These complexities are all matters that need to be dealt with, however, and they do not present insurmountable issues in relation to the discussion on threats to traditional knowledge. Using a trends approach, it is possible to broadly overcome many of these issues, and it is anticipated that the information provided in this report presents the foundation from which specific and positive actions are able to be taken in support of the practice and retention of traditional knowledge.
4. It is important to ensure that it is read in conjunction with reports from phase one of the status and trends regarding traditional knowledge.^{1/} This is important because this report discusses threats and outlines activities that are deleterious to traditional knowledge and therefore can emphasise negative aspects and actions without the balance of outlining positive activities that States, in particular, are engaged in to support traditional knowledge.
5. The second phase of the composite report is an examination of the threats to traditional knowledge that exist within the various regions, broken into classes and sub-divided into particular threats which are then discussed. The second phase seeks to establish trends in order to provide a broad treatment of the variety of threatening processes and actions that exist.
6. Hence, this report aims to provide for enhanced understandings of the pressures that face indigenous and local communities and their traditional knowledge, and may assist in laying the foundation for actions, which respond to the unique needs and interests of indigenous and local communities.

A. *Identification of national processes that may threaten the maintenance, preservation and application of traditional knowledge*

7. Many of the processes that may continue to threaten the maintenance and survival of traditional knowledge have their roots in the histories of many countries, such as in the processes of colonization involving conflict, introduced diseases, dispossession of territories, resettlement, forced assimilation, and marginalization of indigenous and local communities. Some studies have indicated that national

^{1/} This phase one report is: Langton, M. and Ma Rhea, Z. (2003). ‘Traditional Lifestyles and Biodiversity Use Regional Report: Australia, Asia and the Middle East. Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of indigenous and Local Communities Relevant to the Conservation and Sustainable Use of Biodiversity’, report prepared for the Secretariat of the Convention on Biological Diversity, Montreal (UNEP/CBD/WG8J/3/INF/4).

development programmes and policies, modernization of agricultural production and other natural resource-based industries, education and training programmes, and employment strategies often do not take into sufficient account the needs of indigenous and local communities. Similarly, there has been a lack of effective indigenous and local community involvement in the design of the necessary policies and programmes to enable such communities to protect their traditional knowledge or to capitalize on their innovative capacities for the conservation and sustainable use of biological diversity within the national and global economies. In developing the regional reports the consultants were requested to consider the following issues and these have been used here to provide a structure to the discussions:

- (a) Demographic factors;
- (b) National development policies/programmes;
- (c) Education, training and employment policies/programmes;
- (d) National programmes for modernization through the development, transfer and adoption of new technologies;
- (e) Identification of activities, actions, policies and legislative and administrative procedures that may discourage the respect for, preservation and maintenance of traditional biodiversity-related knowledge.

1. Demographic factors

8. All regional reports noted changes in demographics,^{2/} including family structures, (including marital status and family size), education, age patterns, geographic location and settlement patterns (including migration, immigration and increased urbanization), and employment patterns, although there are subtle regional differences, as diverse indigenous and local communities attempt to come to grips with social change.

9. In particular, urbanization, especially away from traditional lands and waters was identified as a common threat to the transmission of traditional knowledge, which is intricately link to traditional lands. In Latin America, the Pacific and in some parts of Asia, migration out of the region for economic reasons is identified as a major obstacle to cultural transmission and the retention and use of traditional knowledge. In particular, this form of migration tends to take away the younger working-age sections of the population leaving behind the elderly and sometimes the very young. The sections of the population leaving are also the sections, who are traditionally the receivers of traditional knowledge and those who would normally be applying it to the environment.

10. It was also reported, especially in the Latin American and the Asia regional reports, that inflows of new social groups into rural areas affect the culture and the environment of the inhabiting indigenous and local communities, often bringing unsustainable practices and a different perception of development and the environment.

11. Regional reports for North America (United States and Canada) and Australia (and New Zealand) reported that the age distribution for indigenous populations were the opposite to that of the general population. Many indigenous groups in developed nations had increasingly young populations with often 50 per cent or more of the populations being below the age of 18,^{3/} whereas the mainstream population in these countries were considered to have aging populations with the so-called baby-boomers (those born after World War II) now reaching 60 years of age. The indigenous populations in the developed world (and the developing world) in general suffer a lower life expectancy of some 20-30 years less than the mainstream population, which further accentuated the young profile of the indigenous populations. The young populations of indigenous peoples in the developed world were associated with

^{2/} "Demographics" are the physical characteristics of a population such as age, sex, marital status, family size, education, geographic location, and occupation.

^{3/} For example, in New Zealand, the median age of people of Maori ethnicity is 22 years and 3 in 8 people of Maori ethnicity are aged under 15 years.

recent improvements in pre and post-natal care resulting in more indigenous children surviving infancy and childhood. It was also noted that unlike many mainstream families, indigenous peoples were less inclined to limit the size of the families. However, indigenous families in the developed world also reported increasingly single parent families and high youth unemployment.

12. Because of these divergent and sometimes inverted demographics, it was also noted that government policies in the developed world, designed around the mainstream population demographics did not take into account the divergent needs of the indigenous minorities and specifically the needs of indigenous youth and this was detrimental to traditional knowledge. This was further exacerbated in both the developed and developing worlds if indigenous and local communities were not fully involved at all levels of government policy-making and implementation and service delivery that impacted upon or affected them.

2. *National development policies/programmes*

13. Many of the regional reports noted that national development policies and programmes were often not developed with the full and effective participation of indigenous and local communities and therefore did not take into account their views or aspirations for new models of development and in particular, for options and forms of sustainable development. In many regions where indigenous people are recognized, they remain marginalized from the power dynamics and decisions making processes that affect them. In regions where they are not recognized they remain largely invisible and unheard. All too often, the indigenous and local communities have been the victims of development rather than the beneficiaries, although often the development has taken place on their traditional lands and waters and/or involved their resources.

14. Environment is still not a priority when dealing with difficult development decisions, and cultural factors are almost absent in the decision-making process. There is a poor understanding of the impacts of development activities on traditional knowledge and practices. Many in the indigenous and local community policy networks claim that transformation needs to happen in policymaking, by integrating all the different factors that account for sustainable development with equity, and strengthening the value of participatory mechanisms.

15. Indigenous and local communities remain interested in development but they seek to redefine development models so that they are sustainable and people-centred. It must also be emphasised that indigenous communities, as distinct peoples, hold their own concepts of development, based on their own values, aspirations, needs and priorities, and that these concepts are often different from other parts of the national population. Their value systems, which are based on a close relationship with traditional resources (for both subsistence and spiritual needs), are such that indigenous peoples play a crucial role in the stewardship of natural resources and biodiversity. Indigenous peoples are also the repositories of extremely rich, varied and locally rooted knowledge systems. Indigenous technology, land and resource management, governance and political and justice systems, medicine, crops, art and music are an important contribution to the world heritage. This rich cultural diversity is extremely valuable in a world threatened by the homogenisation of cultural value systems. As recognised in the World Summit on Sustainable Development Declaration, this wealth of knowledge and practices gives indigenous peoples a vital role in sustainable development for the whole of humanity.

3. *Education, training and employment policies/programmes*

16. Formal education and state and private education systems were viewed, in the regional reports, as both a major obstacles to the retention and use of traditional knowledge and at the same time as possible solutions to ensure that traditional knowledge is retained, valued and passed on.

17. The reason that education systems were often seen as obstacles to the retention and use of traditional knowledge was due mainly to their continuing cultural exclusivity and the historical experience of imposed education systems as vehicles for assimilation. The policies and programmes were and continue to be developed by others and largely imposed upon indigenous and local communities. In

the past, they were often used to assimilate indigenous children and/or to alienate them from their families and cultures. ^{4/}

18. However, education systems are also identified as potential mechanisms and measures to assist in the retention and use of traditional knowledge, if indigenous and local communities are involved in education programme design and implementation with a view to respectfully incorporating traditional knowledge and knowledge holders

19. In many developing countries, governments, in line with international pressures and internationally agreed targets such as the Millennium Development Goals, have established targets to ensure all children go through the formal education systems and today heavily promote formal education systems. It is therefore more important than ever, that formal education systems, which have historically worked against traditional knowledge and indigenous cultures, be radically revised to become inclusive of all those that it shall serve, even the most marginalized.

20. In particular, indigenous and local communities expressed the need to preserve, use and revitalize indigenous languages as a chief vehicle for cultural and knowledge transmission. There was also concern expressed in some regions such as Latin America that conventional bilingual programmes had been used for assimilationist purposes by many Governments. However, in Latin America, the failure of conventional bilingual education programmes and the pressure of indigenous organizations in Bolivia, Mexico, and Ecuador, for example, fostered the recognition of important educational and cultural rights of indigenous peoples, provoking a shift towards a multicultural educational approach (Comboni and Juarez, 2001); this gave rise to multi/inter-cultural educational approaches for indigenous peoples, based on their active participation in designing and developing such programmes.

4. *National programmes for modernization through the development, transfer and adoption of new technologies*

21. All regions reported that rapid modernization presented an active challenge for all of society but modernization is particularly challenging for traditional elements of a country including indigenous and local communities. ^{5/} As stated in the section 2 above, on “development”, it is important that indigenous and local communities are engaged in policies and programmes regarding modernization so that change is measured and managed and is not seen as something imposed upon powerless populations “for their own good”.

22. Many regions and especially the Asian region, expressed concern about losing traditional forms of agriculture in rapid movements of imposed or coerced modernization of agricultural methods forcing indigenous and local communities to abandon traditionally diverse agricultural practices and systems. Many indigenous and local communities noted that the new so-called high-yield crops were also high input crops often requiring hybrid seed stock to be brought from multinationals and then requiring artificial fertilizers and pesticides to be bought and used to ensure a satisfactory yield. In places such as South-East Asia and China it was noted that use of artificial fertilizers and pesticides had severely disrupted traditional complementary rice and fish growing arrangements, which had impacted upon traditional diets, lifestyles and traditional knowledge. It was also reported, in particular, in the Latin American regional report, that new technologies applied in modern agriculture have impacted indigenous and local communities and their natural environment, producing degradation of soils and water, forced migration, temporary agricultural work with unfair conditions (for women, in particular), interruption of traditional agricultural systems, and loss of agricultural biodiversity and traditional practices. Poor farmers have neither access to the new technologies nor adequate infrastructure to gain access to the markets.

^{4/} Such as the residential schools which were imposed on indigenous North Americans until the 1960s.

^{5/} Palau is faced with rapid modernization. The small national population is now only 20,000, but of this, only 13,000 people are Palauan in origin. The remaining 7,000 people are foreign workers or residents. This combination of peoples provides Palau with valuable insights to other cultures and ways of life, but it does “*make the preservation of our traditional past an active challenge*” (<http://www.palau-pcs.org/>).

23. It was noted that some Latin America and the Caribbean countries have made significant progress in developing legal and institutional frameworks for biosafety, particularly under the Cartagena Protocol on Biosafety, but their technical and scientific capacity to identify and avoid the impacts of new biotechnologies is still very limited. The norms on biosafety adopted in the region do not incorporate generally considerations related to cultural impacts. In general, the region lacks effective measures to protect Farmers' Rights and precautionary measures for genetically modified seeds. Such problems relating to agricultural activities, made indigenous and local communities question the value of such forms of modernization.

24. Indigenous and local communities also remained sceptical about modernizations such as the imposition of mass media from which they themselves and their values were largely absent. At worse, indigenous and local community peoples see themselves denigrated in the mass media, often portrayed in stereotypical ways as backward and even as working against national interests. They also expressed concern that the mass media presents a homogenized global culture and western values rather than a cultural diversity and pluralism that is more broadly representative of pluralistic societies and actively undermines traditional indigenous and local community values and denigrates traditional knowledge. In some regional reports, such as North America, the mass media was blamed for further alienated indigenous youth from their families and cultures and the imposing a superficial pop culture and the promotion of unsustainable (and often unobtainable) consumerism.

25. Modernization and its many forms should take place with the prior informed consent of indigenous and local communities actively engaging the decision-making processes and structures of these communities. Modernization should not been seen as a replacement for the old ways and traditional knowledge but should work hand-in-hand, in a complementary fashion.

5. Identification of activities, actions, policies and legislative and administrative procedures that may discourage the respect for, preservation and maintenance of traditional biodiversity-related knowledge

26. In particular, the transboundary and transjurisdictional dimensions of traditional knowledge, provides real challenges for dealing with traditional knowledge on a national level. Some indigenous populations for instance occur across modern State borders and share ecosystems and associated traditional knowledge. Some indigenous communities face unauthorized use from entities outside of their countries with little chance of redress within the context of national legal systems. Many of the regional reports also raised the issue of degradation of lands and waters traditionally occupied or used by indigenous and local communities as a national issue along with lack of secure land tenure.

27. Although loss of indigenous languages occurs at a local level it is often the result of national policies of assimilation or integration, which do not adequately value diverse indigenous languages or as an indirect result of government service delivery in the dominant language only. Government service delivery through (introduced) religious institutions, were also seen as harmful to traditional values and related knowledge.

28. Many of the reports, and in particular the Asian and African regional reports noted that conflict and militarization made it impossible to practice and transmit traditional knowledge, as peace and security are pre-requisites. In the Arctic region and in Hawaii, indigenous communities also noted that low-level military activity such as military-bases, practice ranges and low-level flying was also harmful to traditional practices and related knowledge.

29. Although HIV/AIDS is addressed more fully under local obstacles, certain national policies and attitudes towards HIV/AIDS, together with international funding tied to certain predetermined policy directives, and patents, which reduced the availability of medicines, were regarded as unhelpful in the fight against the pandemic. On a national level, national health policies that ensured that health services including primary health care, were accessible and culturally appropriate and included traditional knowledge and traditional healers were regarded as essential if traditional knowledge was to survive.

30. Although overt colonization has long since ceased in most regions, the “left-over” structures and attitudes continue to influence and damage traditional knowledge systems. Some reports argued that colonization has morphed into neo-colonization or globalization, with the role of the colonizer newly assumed by multinationals.

31. Many communities reported unsustainable exploitation of their environment was often a result of extreme poverty. Poverty threatens the maintenance and preservation of traditional knowledge in various ways, affecting the traditional economy, diminishing the capabilities of individuals to perform their normal activities, altering family structures through migration, inducing stress on natural systems. Poverty and deprivation are incompatible with healthy cultures and healthy traditional knowledge.

32. It was also noted, in particularly in the African regional report, that many national conservation efforts have often excluded indigenous and local communities from their considerations, denying them access to traditional resources and depriving them of goods and services, which they depend on for their livelihood. ^{6/} It was also noted that it was indigenous and local communities (those that could least afford it) who often bore the brunt (costs) of conservation efforts. Policies that so profoundly affect the livelihoods of indigenous and local communities and alienate them from the lands and waters that they traditionally occupied and used have great impact on the retention, use and transmission of traditional knowledge.

33. Difficult relationships between communities and protected areas still exist in many countries, due to the limitations imposed by protected areas to the use of resources, and to the lack of formal recognition of land and resource rights within such areas. However, this is changing. Some laws at the national level start to recognize such rights, as well as the role of indigenous and local communities in the conservation of biodiversity and protected areas management. Experiences of co-management of protected areas are still limited, but are growing rapidly, and lessons are being learned and disseminated. The programme of work on protected areas under the Convention on Biological Diversity opens the opportunity for a new era in protected areas management from the perspective of indigenous and local communities.

34. Potential cultural and economic impacts of bioprospecting on a national level are not yet contemplated in the legislation, such as the disruption of cultural patterns, the absence of motivation to support and preserve traditional knowledge, and the potential impacts of intellectual property regimes on the retention of traditional knowledge. This is a pending issue in the negotiations on access to knowledge related to genetic resources.

35. It was also noted that on a national level, trade policies, have generally not taken into consideration the interests and needs of indigenous and local communities. This is valid for bilateral and multinational trade agreements, some of which are said to impose a new ideological, legal, and political framework that will determine the relations between the transnational capital, the States, and their populations. The complexity of the trade policies and agreements and the exclusion of indigenous groups and organizations who may advocate on their behalfs, makes it difficult for indigenous and local communities to have input or to understand all the implications.

36. Generally, land security for indigenous and local communities has increased in recent times but has not been achieved sufficiently. Ownership regularization and titling processes have not been completed in most countries both in the developed and the developing worlds. Conflicts over land tenure have not been properly attended to in many cases, and options to solve claims over traditional territories have not been thoroughly discussed and analysed in all cases. In most countries, national institutions have very little capacity to deal with and solve conflicts over land, and land issues are not treated as a trans-sectoral subject. The approach to land rights is too narrow and does not incorporate traditional knowledge issues into land policies and vice versa. In particular, recent ideological shifts in some developed countries regarding options for privatization of collectively owned lands where seen as long-term detrimental to community land-bases and traditional knowledge. The relation among land, culture,

^{6/} (McNeely, 1988; Balmford *et al.* 2001, ACHPR, 2005, Gray, 1999)

and traditional knowledge has not been clearly understood, nor explicitly addressed in national policies and legislation.

37. Studies of extractive activities and impacts on indigenous and local communities have shown that they provide little direct benefit. There are too few standards or mechanisms for the evaluation of consultation processes and to guarantee the fairness of the agreements for the use of indigenous and community lands for industry developments. There are no specific considerations in environmental impact assessments regarding the potential impacts of these activities on traditional knowledge.

38. Forest policies and legislation have been generally designed without, or with very little, participation of indigenous and local communities. Very few countries have included considerations regarding forest related traditional knowledge in their forest policies. There are critical problems of overlapping of logging concessions with traditional territories, as well as problems of illegal logging in indigenous and local communities' lands.

6. *Other considerations*

Access laws and regulations to protect traditional knowledge

39. Some countries have advanced framework legislation and consultation processes for the protection of traditional knowledge. However, legal frameworks for access to genetic resources and its relation with traditional knowledge are still incomplete, and main issues remain unsolved, such as the role of registers, procedures to grant prior informed consent, and benefit-sharing.

40. Current discussions on the protection and use of traditional knowledge focus primarily on measures for legal protection and benefit sharing in the context of commercial application of traditional knowledge, but little attention is paid to preservation of such knowledge from a cultural perspective, and for its application to biodiversity conservation outside commercial activities.

Intellectual property rights laws

41. Intellectual property rights regimes are still not able to transform its nature in order to grant traditional knowledge the same level of protection given to the innovations and inventions produced by non-indigenous societies. There is a clear divide between the interests of indigenous and local communities, on the one hand, and the views of corporations and governments, on the other, on matters related to intellectual property rights.

Participation, consultation, and prior informed consent

42. In many countries, there has been progress in establishing participatory processes for indigenous and local communities on biodiversity matters; however, effective legal frameworks do not yet exist, and operational mechanisms are often weak. Most problems related with participation and consultation processes are linked to inadequate timeframes, unclear possibilities to influence the outcomes, lack of adequate information, and limited willingness in government agencies to open opportunities for real involvement in decision-making.

7. *Conclusions*

43. An overview of national processes that may threaten the maintenance, preservation and application of traditional knowledge of indigenous and local communities provides a picture of distinct peoples marginalization from modern nation states. Indigenous and local community participation in all matters affecting them, together with capacity building would provide a basis for improved outcomes regarding their disempowerment, social disadvantage and specifically such issues as the maintenance, preservation and application of their traditional knowledge.

44. In particular, the inclusion of traditional knowledge in national education policies and programmes and health policies and programmes, as well as its use in management of protected areas and

reserves, with the prior informed consent and involvement of the knowledge holders, provide real opportunities for the preservation of such knowledge for the benefit of all society.

45. Because of their unique attachment to the lands and waters traditionally occupied and use by them, indigenous and local community members relocate only as an option of the last resort. Traditional knowledge is intimately connected to these lands and waters and indigenous and local communities need to remain “*in situ*” if they are to be empowered to exercise their traditional knowledge relevant to the conservation and sustainable use of biological diversity. It is therefore important that these lands and waters remain viable to indigenous and local communities. Viability is tied up with issues of ownership, control, access, the right to develop in culturally appropriate ways (sustainable development) and the pursuit of opportunities. There is much that governments can do to ensure that traditional knowledge is incorporated into relevant national policies and programmes and that the lands and waters traditionally occupied and used by indigenous and local communities remain viable to those communities.

B. Identification of processes at the local community level that may threaten the maintenance, preservation and application of traditional knowledge

46. A number of factors that may threaten the maintenance of traditional knowledge also occur at the local community level, by disrupting the processes of intergenerational transmission of languages, cultural traditions and skills. The significance of these factors will vary from country to country, but they generally include changes to patterns of settlement; changes to patterns in demographics (especially age patterns of the population), the movement of young people to cities for employment, education and lifestyle opportunities; introduction of new technologies, foods and medicines, making people less reliant on traditional ways; low levels of life expectancy brought about by changes in lifestyle and new epidemics such as HIV/AIDS; and a host of new cultural influences disseminated through modern media. Many indigenous and local communities, while having a solid natural resource base and the traditional knowledge to conserve and use it sustainably, nevertheless, may not have sufficient capacity to be able to develop these assets for the benefit of their communities in today's economy. In some instances, this situation has encouraged the development of these assets by outside interests to the detriment of the communities and has resulted in their further marginalization.

47. In the terms of reference, the consultants were requested to address these issues as follows:

- (a) Territorial factors and factors affecting communal lands;
- (b) Cultural factors;
- (c) Economic factors (including the relationship between poverty and ecosystem stress);
- (d) Social factors (including demographic, gender and familial factors);
- (e) Constraints on the exercise of customary laws relevant to the management, conservation and sustainable use of biological diversity;
- (f) Lack of capacity to manage contemporary threats to biological diversity resulting from development, over-use and socio-economic pressures generated outside the community;
- (g) The impact of HIV/AIDS on the maintenance of traditional knowledge systems;
- (h) Impact of organized religions on traditional knowledge and practices.

1. General comments – local obstacles

48. Many of the issues raised under national and local are intricately related and indeed the division between local and national and even international is largely an arbitrary distinction often based on policy level or viewing perspective. Many of the local factors discussed below, are in fact the result of international and national arrangements that have been imposed on indigenous and local communities.

2. *Territorial factors and factors affecting communal lands*

49. Indigenous and local communities experience uncertainty in their land tenure, as discussed in all regional reports. The concept of collective rights to lands and waters and indeed the very nature of the relationship of indigenous and local communities with their lands and waters are not adequately addressed or incorporated in modern forms of land ownership. Where a minority of states have developed land rights legislation or other arrangements, it is often applicable only to the remnants of the traditional territories of indigenous and local communities that have not been claimed by other elements of society. Through processes of colonization, indigenous peoples were often removed from their traditional lands and waters with limited chance to return.

50. There are a number of mechanisms through which alienation from traditional territories continue to occur. For example, the creation of protected areas over terrestrial and marine areas without adequate recognition of traditional land access needs was cited as an important issue in the Asia / Australia, the African report and the Latin American report. Some of these parks have even resulted in the forcible removal of peoples and communities from their lands.

51. The granting of land to external parties, such as trans- and multinational corporations for purposes of resources exploitation such as logging, mining, large damming, agricultural or industrial projects also continues to be a source of significant loss of land and rights.

52. The growth of urban areas and the privatisation of lands over traditional lands, as well as the development of infrastructure that impacts upon lands such as roads are also an important source of alienation of local and indigenous peoples from their traditional lands and waters.

53. Where land rights of indigenous peoples have been recognised, authorities have often been unable to defend these rights. Such insecure tenure makes it difficult to manage natural resource in traditional ways and preserve related knowledge. For example, some countries in Latin America have acknowledged indigenous territories through concepts such as Territorial Circumscription in Ecuador or Territorial Entities in Colombia. However, titling alone does not guarantee land security, as is demonstrated by the frequent granting of private rights over these traditional territories. In Bolivia, recent measures and constitutional rights have reinforced traditional territorial rights but several traditional lands are still illegally occupied.

54. Bioprospecting is an area of particular concern in that it exploits knowledge, innovations and practices that are possessed by indigenous peoples and local communities. This is generally done without adequate prior informed consent and benefit sharing arrangements. As well as denying economic benefit to communities, the unwarranted intellectual property rights granted through bioprospecting can have the effect of alienating communities from their lands and preventing them from using and controlling their own knowledge.

55. Much of the traditional knowledge in communities relates to achieving a balance between the needs of the community and the needs of nature. However, many of the animals and plants traditionally harvested have been taken over by large scale monoculture agriculture and farming. With the loss of these economies and species comes the loss of traditional knowledge associated with them. This has been cited as a problem in all reports.

56. Militarization and conflict has been a source of land loss for local and indigenous communities throughout history and continues in several areas of the world. For example, in Colombia, over three million people (mostly indigenous and local people) have been displaced since 1985; in Peru, about 600,000 people were displaced between 1980 and 2000, and less than 10% have returned to their original settlements. In Colombia, since the beginning of the 1990s, drug cultivators and traffickers have taken an estimated three to four million hectares of agricultural lands.

57. Failure to account for existing land use of indigenous and local communities also undermines the ability of communities to continue to pursue their traditional economies and keep their traditional knowledge vibrant. For example, the Algonquins of Barriere Lake in Canada had an official

unemployment rate of 90 per cent in the early 1990s, even though there was the equivalent of \$575,245 of goods from the land was going through the community of 450 people every year.

58. The lack of self-government and influence on decision-making over land use and management is detrimental to sustainable development and the maintenance of a community's traditional knowledge. For example, despite self-government legislation in the United States of America, the federal Government continues to hold tremendous plenary power. The same is true in Canada, as few indigenous communities have had their right to self-government recognized. Communities are rarely consulted on what crops to plant, whether waters can be diverted, or where a new settlement or factory will be created. They are also sidelined from private sector decision-making over the development of natural resources in their territories. As well, the bureaucracy surrounding the federally controlled lands designated for indigenous communities in North America continue to be an important barrier to the retention and use of traditional knowledge as community's have little choice but to depend on government assistance or external investors (who often build culturally inappropriate economies) to survive. This dependency undermines a community's ability to protect and practice their traditional knowledge.

3. *Cultural factors*

59. Since colonization, local and indigenous communities have been dealing with continual forces of assimilation and policies of integration that are damaging to their cultural integrity and weaken their ability to use and retain their traditional knowledge.

60. Globalization has increased contacts among peoples and their values, ideas and ways of life in unprecedented ways. The increased penetration of Western media, multinational companies and the Internet into local and indigenous communities threaten the cultural viability of these communities in several ways, including the growing push towards westernisation, growing values of individualism, homogenization of lifestyles, culture and world views, changes in consumption habits away from customary and traditional goods and services to those promoted by the west, and growing consumerism. Globalization has accelerated the flows of investment that profoundly affect the livelihood of many indigenous and local communities. For example, investment in mining exploration and developments in Africa doubled between 1990 and 1997. Because so many of the world's natural resources are located in indigenous and local communities' lands, the global spread of investments and the survival of local and indigenous communities are inextricably linked.

61. In all reports, there were concerns for the disrespect that is afforded traditional knowledge and local and indigenous cultures. This has manifested itself through ignoring the history, laws and knowledge of local and indigenous communities in school curricula, the transition from oral to written culture, and the inability or unwillingness of many Elders to share their knowledge as well as widespread discrimination, racism and cultural insensitivity throughout mainstream society. This disrespect has also resulted in assimilationist policies towards these communities who are often viewed as uncivilised and inferior. These factors combine to create enormous social pressure on communities to conform to a norm that is set externally. Assimilation pressures indigenous and local communities to cast aside their culture and cultural ways in favour of those held by majority peoples or ruling elites.

62. There is widespread belief that views local knowledge as lacking legitimacy in mainstream thought and that regards "objective" Western science as superior. Western-trained scientists generally reject local knowledge which they either cannot or will not understand as it often does not fit into their formal models, and challenges conventional theories. Projects that attempt to make use of traditional knowledge are frequently viewed as unscientific and unacceptable. Such attitudes remain deeply embedded both in individuals and institutions.

63. In the Pacific, as well as in other regions, there is a growing recognition that traditional values and practices strengthen cohesion and identity, and that benefits include the sharing of resources and aid. Nonetheless, culture is often given a low priority for international aid donors, who do not appreciate the central role that culture plays in development and economic and social wellbeing. As well, Governments have not integrated culture into national development policies

64. Along with the loss of biodiversity and the erosion of traditional cultures, the world is currently undergoing a third extinction crisis: that of the diversity of human language. The decline in linguistic diversity contributes to the loss of the traditional knowledge. Indigenous and local communities develop knowledge systems through a tradition of invention and develop languages through which to articulate their knowledge. People who lose their linguistic and cultural identity may lose an essential element in a social process that commonly teaches respect for nature and understanding of the natural environment and its processes. Data from North America demonstrates the extent of this crisis. There are estimates suggesting that at the time of contact, there were over 300 languages in North America. Almost one third of those are now extinct and many more are in jeopardy. Of the 216 indigenous languages identified in North America, close to two-thirds have 500 or fewer speakers, which is likely too low to keep them alive.

65. Poorly planned tourism often result in communities being invaded by foreign visitors. Tourists bring with them their own cultures, traditions and worldviews that disrupt local cultures. Interactions between community members and tourists often lead to cultural erosion as many community members, especially the younger members, imitate and adopt the mannerism of their guests. Vulnerability has also forced indigenous and local communities to sell their valued and culturally important art objects for a meagre amount, resulting in the removal of indigenous art from the communities. Furthermore, tourism often results in the objectification of local and indigenous cultures by placing cultures into a particular space, as applied by the perspective and knowledge system of a dominant culture. This separates traditional cultures from their temporal dimension of evolution and reinvigoration and places cultures into the past rather than allowing them to define an existence relevant for the present.

66. Local and indigenous communities are often caught between traditional and modern society. In some cases people have difficulty in coping with the demands and obligations of the traditional society and the demands and expectations of the emerging modern society. This creates a situation of divided loyalties. Many people find it difficult to continue to identify with village life and at the same time become members of modern institutions. One example of this is the influx of new technologies and tools. Community members are often caught between the choice of using new technologies and losing their traditional knowledge or using traditional methods and not being able to compete economically.

67. Finally, several reports raised the detrimental effect that illegal mining, human trafficking, drug trafficking and armed conflicts have on cultural patterns and the physical integrity of indigenous communities. This is particularly problematic in Brazil, Colombia, Venezuela, and Peru. All these factors have forced indigenous and local communities to reframe their survival strategy, and to alter their cultural patterns, and traditional systems of resource management. As well, in Africa the ownership, exploitation, and distribution of resources has too often fostered and fuelled civil conflicts and war. War has often led to virtual breakdown of societies. This situation can force people to withdraw into their homes for safety and there is less participation in normal day-to-day activities in the community and the use and transfer of traditional knowledge is threatened.

4. *Economic factors (including the relationship between poverty and ecosystem stress)*

68. Traditional knowledge and biodiversity cannot be conserved without addressing the problem of rampant poverty in indigenous and local communities. Several reports discuss how poverty drives users of biodiversity to utilize more of the resources in their territories to the point of threatening sustainability. Pressures of poverty place great strain on social fabric and cultural institutions, which can break down the cohesiveness of communities and their abilities to practice cultural traditions and expressions. Poverty also has the effect of forcing indigenous and local communities to relocate away from the territories their traditional knowledge is practiced in and removing them from their cultural and spiritual context. The increased levels of poverty of indigenous and local communities can be demonstrated by North American statistics which show that in Canada “registered Indians” earn less than half of the average income.

69. Local and indigenous communities generally have limited market access for their goods and services. This is often because of a community’s geographical isolation, the small size of their economy and/or because the community lacks the skill and capital required to develop their interaction with

external markets. The African report wrote that community members rarely understand the true economic value of their goods and services and this is often exploited by third parties.

70. The integration of traditional economies into external markets is frequently happening without mechanisms to facilitate their entry in ways that do not threaten their traditions. Therefore, economic development is occurring at the expense of traditional patterns of distribution of production and labour as well as laws of communal ownership/custodianship, reciprocity, redistribution and sustainable use. Trade processes have created neither motivation for conservation of natural resources, nor disincentives for unsustainable practices. Studies show how traditional societies are deteriorating in Peru and Colombia because communities are forced to ignore their traditional rituals in hunting activities, resulting in overexploitation of certain species highly appreciated in the market.

71. The exploitation of natural resources by third parties was and remains a central part of the relationship between the indigenous and local communities and their colonial powers. This limits the ability for local and indigenous communities to pursue sustainable economic development of their resources in accordance with their traditional knowledge and customary laws. For example, island countries in the Pacific often found themselves locked into one major source of resource exploitation under the colonial administration. The indenture of labourers to work the sugar fields on native land in Fiji, for example, has left social, cultural and economic legacies, highlighted in the 1987 coups. Banabans and Nauruans have seen their islands mined for phosphate, leaving supplies of cash but a moonscape environment and loss of land to live on.

72. The removal of customary rights to the land and resources of local and indigenous communities as well as the forced removal of people from their lands and into marginalised communities also prevents sustainable development of these communities based on their lands, resources laws and traditions. This has been prevalent in Australia, where native title is seen as a bundle of rights to land rather than an interest in it, oftentimes excluding any right to economic benefit from the land. In these cases, communities are no longer able to derive any real or economically valuable outcomes from their lands, hence casting them into a cycle of poverty

5. *Social factors (including demographic, gender and familial factors)*

73. Indigenous and local communities are experiencing widespread changes in family structure from extended family to nuclear families, consequently weakening links between the grandparents' generation (which holds much of the knowledge) and the grandchildren's generation. HIV/AIDS in Africa is also having a significant impact on the African family structure in that it has increased the number of orphans in villages and urban centres and has left many families in the hands of the Elders.

74. High levels of urbanisation have proved destructive to traditional family, community and cultural institutions. In hopes of better lives in urban centres, young individuals and families move to urban areas in search of employment, formal education, and other opportunities not found in rural areas. Urbanization is not just happening within countries, but between countries as well. For example, the chief export of Pacific islands is human resources. This is resulting in the depopulation of working-age people in smaller communities. Their knowledge becomes much less relevant in urban areas, resulting in a loss of valuable traditional knowledge.

75. Traditional institutions and knowledge are also being threatened as traditionally nomadic or semi-nomadic communities become increasingly sedentary. Greenland, for example, is experiencing rapid modernization resulting in the relocation of many communities to Nuuk and other towns. Many of these communities have difficulties adapting to new lifestyles and new ways of production and hierarchical administrative, linguistic and educational demands, and qualifications. Traditional kinship- and family-based social organization becomes fragmented, resulting in social differentiation and important losses of traditional knowledge.

76. Changing population levels is another threat to cultural and traditional knowledge survival. Africa's ever-rising population, which is expected to double by 2035, is putting an ever-increasing demand on the diminishing natural resources and land bases. This is continually decreasing the land-base

upon which indigenous and local communities live, and practice their traditional knowledge. In North America, the population of indigenous communities compared to the rest of the population is growing rapidly. This is problematic because the young are not being taught their traditional knowledge to the extent that is necessary to ensure the knowledge survives another generation or two.

77. Gender is a critical factor affecting the nature of traditional knowledge. Traditionally, women in most indigenous and local communities are primarily responsible for food preparation and distribution and for ensuring the short and long-term health of the family and community. Indigenous women are, therefore, highly knowledgeable about biodiversity and the links between traditional knowledge and the maintenance of cultural and spiritual values. The changes to these roles as well as the lack of present acknowledgement of the role that women play in the preservation of knowledge are threatening the use and sustainability of traditional knowledge. For example, a study looking at women's knowledge of changes in humpback whitefish in a subsistence-based economy in Alaska shows that women and men have different experiences and knowledge of the fishery and the ecosystem upon which it is based. For example, women are able to judge changes in the fishery from year to year much more than men. The lack of recognition of these differentiated gender roles in the holding and use of knowledge is a significant threat to the preservation of traditional knowledge. If women, as major traditional knowledge holders, are deliberately marginalised or are not properly acknowledged for their contribution to knowledge, community and culture, then not only is a great portion of a system being overlooked and at risk to be lost.

78. The lack of appropriate nutrition is another significant source of traditional knowledge loss. The African report discussed the particular problem of between bad nutrition for those who leave rural areas urban centres or for those who are alienated from their land and resources (thereby reducing the ability to use and maintain traditional knowledge). Traditional foods available in rural communities often have the necessary nutrients for a healthy body. In urban centres, however, these foods may not be readily available and the people may have to rely on new foodstuffs that may be lacking in nutritional value (especially cheaper convenience foods). This has resulted in an increase of disease especially diabetes, heart disease and obesity.

79. Poverty, marginalization and alienation from traditional lifestyles have resulted in several other social and health problems as well. Indigenous and local communities in many cases have higher rates of suicide, depression, crime and lower life expectancies. Problems of low life expectancy coupled with high infant mortality and low fertility rates are continuing to worsen in many areas, such as in the Russian Arctic.

6. Constraints on the exercise of customary laws relevant to the management, conservation and sustainable use of biological diversity

80. Restraints on the practice of customary law in indigenous and local communities have also been a source of traditional knowledge loss. For example, the scope for the New Zealand Government to limit the exercise of customary law is apparent with the passage of the recent legislation, the Foreshore and Seabed Act (2004), which extinguishes the possibility of establishing Maori customary titles over the foreshore and seabed and fails to provide a right of redress. Without customary title to the land, it can be illegal to gather seafood or shellfish and to manage the marine resources sustainably according to customary law and traditional knowledge. Traditional authority and customary laws is also undermined where permits for access to and exploitation of resources are granted at the national or provincial levels, leading to increasing conflicts between national legislation and customary rights and practices.

7. Lack of capacity to manage contemporary threats to biological diversity resulting from development, over-use and socio-economic pressures generated outside the community

81. Many communities are unable to protect their traditional knowledge because of a serious lack of capacity. Limited capacity is prominent in several areas, such as lack of good governance, lack of basic infrastructure, limited human, financial and social capital, a lack of indigenous-led research initiatives or the lack of local experts available to deal with local environmental threats. Indigenous peoples who are unable to self-govern must rely on outsiders to respond to problems. These outsiders are often insensitive

to or unaware of concerns of traditional knowledge, and hence traditional knowledge is not part of the problem solving processes and/or development frameworks.

82. The capacity of local and indigenous communities to use economic, scientific and traditional knowledge to monitor, assess and predict environmental, social and economic risks and effects of climate change is weak. This is critical for developing and implementing viable and sustainable national programmes. This is particularly poignant in the Arctic, where communities have little power over the increasing levels of persistent organic pollutants in the environment or the increasing greenhouse gases in the atmosphere, which are causing devastating changes to their environment and way of life.

83. Indigenous and local communities are also often marginalized and prevented from planning and managing the resources they use. This is exemplified by the lack of control most indigenous and local communities have over the introduction of invasive species into their territory. Another particular example is the Dja Reserve in Cameroon which is managed by the State even though the reserve is on the traditional territories of indigenous communities. After 10 years, communities are still not involved in planning for the Dja Reserve, and have almost no role in the management of the park. The effects of this management approach on local and indigenous communities has often been severe, including aggressive persecution of communities by ecoguards for their subsistence hunting activities, even of non-protected species collected far outside the Reserve.

84. Some analysts have pointed out that even when efforts are made to increase capacity of these communities, the pace of change is faster than the growing capacity of indigenous and local communities to respond and adapt their traditional management systems to those changes. If there is not a balance found between the rate of introduced change and the capacity to respond to those changes, traditional systems and knowledge will be irreversibly undermined.

8. *The impact of HIV/AIDS on the maintenance of traditional knowledge systems*

85. The impact of HIV/AIDS on the maintenance of traditional knowledge systems has been greatest in Africa. While Africa has only 13 per cent of the world's population, over 50 per cent of the people infected with HIV live on this continent. Nowadays HIV/AIDS has become the primary cause of death in Africa. In Zimbabwe, for example, more than a quarter of the adult population is infected with HIV, but the country has less than US\$ 40 available to treat each case. HIV is impacting on the very ability of nations and government to work towards sustainable development. It is disrupting social and cultural coherence in many rural communities and as such also has an impact on the transmission of traditional knowledge in general. HIV is also a major problem in the Caribbean countries. This region is the second most affected region in the world, with HIV being the leading cause of death among adults and with higher incidence of the infection in Haiti and Jamaica. In countries with high dependence on tourism, incidence of the infection is also high, such as in Barbados, Bermuda and the Dominican Republic.

86. In the rest of Latin America, ethnic discrimination has caused severe inequalities in health care more generally for indigenous and local communities resulting in resurgences of several illnesses among indigenous populations, such as tuberculosis, hepatitis B, and cholera. For instance, in Venezuela, half of Yanomamis living in the Amazon Region have been infected with hepatitis B, which is the third major cause of mortality, after under-nourishment, and malaria.

87. HIV rates remain low across much of the Pacific but show signs of increasing. Other health concerns, however, are already pandemic. The main causal factor associated with drastic health transformation is the abandonment of the traditional diet coupled with a more sedentary lifestyle and widespread consumption of tobacco. The change from an active agrarian lifestyle to a more sedentary white-collar lifestyle, combined with abundant introduced food, has resulted in general obesity and other lifestyle diseases in the population.

88. The HIV/AIDS epidemic is only the most recent epidemic affecting indigenous peoples in North America. Before AIDS, it was small pox, influenza, measles, polio, and tuberculosis. Millions of indigenous peoples have already died from these diseases. Most of the damage was done long before HIV/AIDS. Today, indigenous peoples in North America continue to suffer high rates of disease and

illness. They have lower life expectancies, particularly those living on reserves, and have higher rates of diabetes, tuberculosis, HIV-AIDS, and oral, visual or mobility impairments. Suicide, drug, solvent and alcohol abuse, physical and sexual abuse, and violence are also more prevalent in indigenous communities.

89. HIV-AIDS and other health crises in indigenous and local communities have a negative impact on the individual and collective capacity to exercise traditional knowledge. But sickness and ill health are also the result of the inability to exercise traditional knowledge, thereby forming a vicious circle. Much of the poor health in indigenous communities is attributable to poverty and despair from a general lack of capacity to influence one's environment.

90. There has been very little overall effort to develop health programmes specifically for indigenous peoples. So far, government has failed to adapt health systems to indigenous needs by not taking into consideration their cultural characteristics. The need for such development is clear and its benefits documented. Under-nourishment affects indigenous and local communities that have modified their natural environment and lost their traditional source of feeding, while communities that are relatively isolated have better levels of nutrition.

9. *Impact of organized religions on traditional knowledge and practices*

91. Religion has been one of the main drivers in disrupting traditional knowledge, innovations and practices of local and indigenous communities all over the colonized world. Introduced religions were historically a foundation for colonialism and assimilation through aggressive missionary programmes seeking to alienate indigenous peoples and local communities from their belief systems and traditional knowledge.

92. In Australia for example, one of the major effects of organized religion has been what is termed the "stolen generations"—the State-sanctioned removal of indigenous children from their parents and their placement onto Christian missions, where they were subject to harsh conditions and often mistreated. This was a devastating time (until circa 1970) for indigenous communities in Australia, where both the state and the Christian church were complicit in designing a system whose purpose it was to assimilate indigenous children into white society and to alienate them from their culture, language and to break down their traditional knowledge systems. There remains a significant presence of missionaries in the region, and there remains a justification of colonial practice an assimilation pressures based on ideas of the major organized religions, and the conversion of peoples and communities who adhere to an "inferior" or "blasphemous" belief system and way of life to one that is in line with the colonial people or force. The Residential Schools in Canada the United States has a similar history.

93. Indigenous peoples in Africa also have noted the impact of organized religions both Christian and Islamic and have noted the tendency of indigenous beliefs to "go underground", whilst the communities may take on the superficial trappings of imposed beliefs including such things as individual names to avoid discrimination from the dominant society.

94. Measures to stop the impacts of religious groups on indigenous peoples have been scattered and weak. In fact, religious institutions, such as the Catholic Church and modern originated sects of United States origin, have generally enjoyed open support from governments and dominant elites. For instance, the Peruvian law for native communities of 1974 has an article that prohibits religious proselytism in indigenous lands, but specific provisions to guarantee its enforcement were never developed. After several centuries of religious imposition, indigenous and local communities have largely embraced Catholicism and other religions, and therefore the likelihood of a revival of original indigenous spirituality is often very small.

10. *Conclusions*

95. The next phase of the composite report on the status and trends regarding the knowledge, innovations and practices of indigenous and local communities relevant to the conservation and sustainable use of biodiversity will focus on mechanisms and measures to address the underlying causes of the decline of traditional knowledge, innovations and practices. In this regard, it is useful to consider

initiatives for the protection and use of traditional knowledge that have already had success. This will help point to projects that should be strengthened and where capacity-building is particularly useful.

96. At the local level, there are several areas where certain types of initiatives have shown particular promise. Some of these are:

- (a) Traditional health care initiatives;
- (b) Strengthening opportunities to learn and speak indigenous languages;
- (c) Culturally appropriate tourism policies;
- (d) Environmental research projects and data collecting based on traditional methodologies;
- (e) Building of culturally appropriate business structures within communities (such as cooperatives);
- (f) Developing technologies (such as agricultural tools) that focus on traditional methods of harvesting;
- (g) Reestablishment of traditional spiritual/religious institutions (such as longhouses);
- (h) Creation of media, such as radio, newspapers and television stations controlled by indigenous people and with indigenous content;
- (i) Creation of protected areas controlled by indigenous and local communities,
- (j) Initiatives bringing together youth and Elders;
- (k) Promotion of the creation of businesses offering traditional products and services;
- (l) Strengthening institutions that foster traditional collection and distribution of food and other resources.

97. In all types of mechanisms and measures used to promote traditional knowledge, as well as cultural, social and economic well-being, it seems that capacity-building is crucial. This involves a significant commitment to building the educational, governance, management and professional capacity of indigenous and local communities. It is also important to build the strength, infrastructure and capacity of indigenous and local institutions, such as governance structures, research bodies, economic structures, health care systems and education systems.

C. Identification of processes at the International level that may threaten the maintenance, preservation and application of traditional knowledge

98. In consultations and regional workshops with indigenous and local communities it was universally emphasized that in addressing processes at both local and national levels, there was also a need to take into account an international dimension. The international dimensions were also taken up in the regional reports. Following is a brief summary concerning the international processes that may threaten the maintenance, preservation and application of traditional knowledge.

99. In particular the following issues were considered to be of international significance in addressing obstacles to the retention and use of traditional knowledge:

- (a) Climate change;
- (b) Globalization;
- (c) On-going effects of Colonization;
- (d) Conflict and militarization;
- (e) HIV/AIDS;
- (f) Millennium Development Goals;

- (g) International intellectual property law;
- (h) International development and food aid and;
- (i) Indigenous participation at international levels.

Climate change

100. Climate change was addressed by all reports as a growing threat to the continuation of traditional knowledge. The threat is particularly pressing for communities living on small islands (in particular the Pacific region), in the Arctic region and at high altitudes. In fact, many communities are already being forced to relocate or change their traditional activities because of melting ice, rising sea levels, melting glaciers and increasing natural disasters. For example, inhabitants in the Lateu settlement on Tegua island in Vanuatu started have already had to dismantle their wooden homes and move about 600 metres inland with coconut palms on the coast already standing in water. Given that this is happening to communities around the globe, and those communities and States most affected by climate change are rarely the perpetrators of climate change, this problem must be dealt with at an international level.

Globalization

101. The globalization of economies has profound affects on politics, economics and culture at local, national and international levels. Free trade threatens traditional knowledge by providing new products and services to communities, which may change the traditional lifestyles of communities and replace traditional practices and foodstuffs. As free trade grows, the decision-making processes affecting market access and the use and protection of many resources is happening more and more at an international level. Given that indigenous and local communities have either no or a marginalized voice in many international forums, communities find they have less and less control over their resources and their economies. This, in turn, threatens a community's ability to retain and use their traditional knowledge. The North American report noted that the North American Free Trade Agreement has often systematically pushed out the voice and interests of indigenous peoples.

Ongoing effects of colonization

102. Many of the regional reports identified the ongoing effects of colonization as a significant obstacle to the retention and use of traditional knowledge. Although colonization in its classic sense may have ended, the legacy of colonial attitudes remain and often influence those in power. These left-over attitudes of colonization have sometimes influenced indigenous thinking about themselves resulting sometimes in uncertainty and poor self-esteem and lack of respect for customary law and lack of respect for their own knowledge systems. As well, many of societal structures also remain colonial in effect, such as education institutions and health systems, which value the knowledge of dominant societies over other systems of knowledge. Ultimately to minimize the ongoing impact of colonization what is needed is broad attitudinal change through public education, reconciliation, anti-discrimination measures and inclusive policies and programmes.

Conflict and militarization

103. The regional reports noted that conflict and militarization takes different forms in different regions. In some regions, such as Hawaii and the Arctic, the present of military bases and even low-level flying were seen as disruptive to the retention and use of traditional knowledge. In its most pronounced form, violent conflict between ethnic groups and wars were seen as extremely disruptive to the use and retention of traditional knowledge. In the African region, it was noted that the Batwa of Rwanda (an indigenous pygmy people) had been caught in the conflict between other ethnic groups and had suffered grievously. Many of the regional reports emphasized that peace was a pre-requisite for the retention and use of traditional knowledge.

HIV/AIDS

104. Although HIV/AIDS was viewed also as a local and national issue there remains international dimensions to this issue. Certainly the use of patents to restrict the production of vital drugs and the need for the availability of generic and affordable medication were regarded as international dimensions of HIV/AIDS, as was the ultimate development of a vaccine.

Millennium Development Goals

105. When the Heads of State adopted the Millennium Declaration in September 2000, they committed their nations to global efforts to reduce poverty both in urban and rural areas, improve health and promote peace, human rights and environmental sustainability. However, there were no representatives of indigenous peoples involved in the initial conceptualization of the Millennium Development Goals and they have until now been largely absent from developing strategies and indicators as well as monitoring and reporting progress for achieving the Goals. Consequently indigenous peoples' awareness and understanding of the Millennium Development Goals is very low, reinforcing their exclusion from the current processes.

106. This omission may lead to the exclusion of indigenous peoples from sharing the benefits of the Millennium, Development Goals and may in fact adversely impact their communities. Moreover, if the world's indigenous and local communities are not reached and do not benefit from the Millennium, Development Goals, the general efforts to achieve them by 2015 are likely to fail in many countries. In particular, as countries accelerate development in an attempt to lift their populations out of poverty, indigenous and local communities fear that they may bear the brunt of the accelerated development as it may occur at the expense of their lands and waters and the resources contained therein.

107. There is also concerned that in some countries, indigenous peoples may even deliberately be left out of efforts to achieve the Millennium, Development Goals, as they are comparatively more difficult to reach and to bring up to the living standard of other groups. Another concern remains that such laudable goals as "alleviation of extreme poverty" and "primary education for all", can work against indigenous aspirations if indigenous communities are not fully involved in their interpretation and implementation. For instance poverty alleviation, which leaves communities dependant on food aid will act against the retention of and use of traditional knowledge. Food aid using genetically modified seeds may lead to local contamination issues where communities save some their food aid to replant crops. Also primary school education imposed on indigenous and local communities using mainstream curricula devoid of indigenous content will also work against the retention and use of traditional knowledge.

108. This, in short, is the double challenge posed to the Millennium, Development Goals by indigenous and local communities; on one hand they have the right to be fully included and to benefit from the global efforts to achieve the Goals, while on the other, their rights to define their own development path and priorities, must be respected, in order to ensure that the Goals contribute to the full realization and strengthening of the potential of these peoples and their retention and use of their knowledge systems.

Indigenous participation at international levels

109. Although indigenous participation at international levels has much improved in recent times, indigenous communities remain concerned that the level of involvement and their capacity to be involved continues to be extremely limited. Indigenous and local community participants at regional meetings often held the working methods of the Working Group on Article 8(j) up as an example of good practice for other international entities but at the same time they expressed a need to be more fully involved in other areas of the Convention and also in other vital global discussions concerning such issues as climate change and sustainable development.

Appendix

MATRIX OF COMMON ISSUES – NATIONAL PROCESSES THAT MAY THREATEN THE MAINTENANCE, PRESERVATION AND APPLICATION OF TRADITIONAL KNOWLEDGE, INNOVATIONS AND PRACTICES AND THE IDENTIFICATION OF PROCESSES AT THE LOCAL LEVEL THAT MAY THREATEN THE MAINTENANCE, PRESERVATION AND APPLICATION OF TRADITIONAL KNOWLEDGE, INNOVATIONS AND PRACTICES (DECISION VI/10, ANNEX I)

Note: This matrix has been filled-in by the Secretariat according to whether the obstacle should be addressed as a high priority (H), medium priority (M) or a low priority (L) at either the local, national or international level. The priority level was assigned based on the Secretariat’s understanding of the information contained in the regional reports of phase two of the composite report on the status and trends regarding the knowledge, innovations and practices of indigenous and local communities relevant to the conservation and sustainable use of biological diversity.

National, local and international obstacles to which indigenous and local communities are subject	Africa	Asia	Australia	Arctic	LAC	North American	Pacific	NOTES: Level of Obstacle
Territorial Factors								
1. Degradation of territories	H	H	M	H	H	M	H	National and Local
2. Transboundary / trans-jurisdiction dimensions of traditional knowledge	H	H	M	M	H	M	H	National
3. Climate change	H	H	M	H	M	M	H	International and National
Cultural Issues								
4. Loss of indigenous languages	M	H	H	H	H	H	M	Local
5. Introduced Religion and foreign value systems	M	M	H	H	M	H	M	Local
6. Continuing Colonization	H	H	H	M	H	H	H	National and International
7. Westernization / commercialization	H	H	H	H	M	H	H	Local
8. Objectification through tourism	H	M	M	M	H	H	M	Local
Social Factors								
9. Conflict / militarization	H	H	L	M	H	L	M	National and International
10. New technologies	H	H	H	H	H	H	H	National
11. Livelihood and food security	H	M	M	M	M	M	M	Local
12. Poverty	H	H	H	H	H	H	H	Local

National, local and international obstacles to which indigenous and local communities are subject	Africa	Asia	Australia	Arctic	LAC	North American	Pacific	NOTES: Level of Obstacle
13. Status of indigenous women	M	M	M	H	M	H	M	National and International
14. Health issues – including HIV-AIDS	H	H	H	H	H	H	H	National and International
15. Lack of capacity – including management, research or leadership	H	H	H	H	H	H	H	Local
16. Globalization, including increasing trade, free-trade, increase in information availability and homogenization of cultural influences	H	H	H	H	H	H	H	National, Local and International
Demographic Factors								
17. Increasing population	H	H	L	L	M	L	M	National and Local
18. Differing population patterns compared to the majority, including an increasing youth population	H	M	M	M	M	M	M	National and Local
19. Increasing urbanization, people movement and migration	H	H	H	M	H	M	H	National and Local
Legal Issues								
20. Lack of formal recognition and respect for traditional knowledge	H	H	M	M	M	M	M	National and International
21. Economic issues, including bio-trade, bio-prospecting and intellectual property issues	H	H	M	M	H	M	H	National and International
22. Lack of secure land tenure	H	H	H	H	H	H	H	National and Local
23. Status of indigenous peoples – including racism/discrimination	H	H	H	M	H	H	M	National and Local
24. Lack of recognition and access to (traditional) resource rights	H	H	H	M	M	H	M	National
Policies and Programmes								
25. Imposed 'Western' Education	M	H	H	H	H	H	H	National

National, local and international obstacles to which indigenous and local communities are subject	Africa	Asia	Australia	Arctic	LAC	North American	Pacific	NOTES: Level of Obstacle
26. Food aid and introduced foods	H	M	H	H	M	H	M	National and International
27. Unsuitable or unsustainable development	H	H	M	H	H	H	H	National and International
28. Lack of participation in decision-making	H	H	H	H	H	H	H	National and International
